

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants : Thomas Thoroe SCHERB et al. Confirmation No.: 8138
Appln. No. : 10/743,461 Group Art Unit: 1731
Filed : December 23, 2003 Examiner: Eric J. Hug
For : MACHINE AND METHOD FOR THE MANUFACTURE OF A
FIBER MATERIAL WEB

**REQUEST TO REOPEN PROSECUTION AND
RESPONSE TO NEW GROUND OF REJECTION**

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Window, Mail Stop Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

Pursuant to the new ground of rejection made by the Board of Patent Appeals and Interferences under 37 CFR 41.50(b), Applicants request the prosecution of the instant application be reopened by the Examiner. As this request is being made within two months of the November 3, 2006 mailing date of the Board's decision, Applicants submit this request is timely filed in accordance with 37 CFR 41.50(b). Moreover, allowance of all the claims of the present application are respectfully requested and are now believed appropriate in view of the following amendments and remarks.

A Listing of Claims reflecting the status of the claims begins on page 2 of this paper.

Remarks begin on page 9 of this paper.

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A machine for the manufacture of a fiber material web, comprising:

a shoe pressing unit;

a cylinder comprising a Yankee drying cylinder, said shoe pressing unit and said cylinder being arranged to form at least one press nip;

a water absorbent carrier band;

a water-impermeable pressing band, wherein said water absorbent carrier band and said water-impermeable pressing band are guided through said at least one press nip, and the fiber material web is adapted to pass through said at least one press nip with said water absorbent carrier band and said water-impermeable pressing band; and

said at least one press nip has a length in a web travel direction greater than approximately 80 mm,

wherein said shoe press unit, said cylinder, said water absorbent carrier band and said water-impermeable pressing band are structured and arranged so that a pressure profile which results over the press nip length has a maximum pressing pressure which is less than or equal to approximately 2 MPa, and

wherein said shoe press unit, said cylinder, said water absorbent carrier band and said water-impermeable pressing band are structured and arranged for the formation of one of a tissue paper and a hygienic paper web.

2. (Original) The machine in accordance with claim 1, wherein said press nip length is less than 200 mm.

3. (Original) The machine in accordance with claim 2, wherein said press nip length is at most 150 mm.

4. (Original) The machine in accordance with claim 1, wherein the maximum line force produced in said press nip is between approximately 90 and approximately 110 kN/m.

5. (Original) The machine in accordance with claim 1, wherein said shoe pressing unit comprises:

a plurality of press elements arranged adjacent one another cross-wise to the web travel direction;

a press shoe arranged to be pressed against said cylinder, wherein said plurality of press elements are adapted to press said press shoe against said cylinder.

6. (Original) The machine in accordance with claim 5, wherein said plurality of press elements are actuatable independently of one another.

7. (Original) The machine in accordance with claim 1, wherein the pressure profile which results over said press nip length is asymmetrical.

8. (Original) The machine in accordance with claim 1, wherein the maximum pressing pressure is exerted in a rear quarter of said press nip length with regard to the web travel direction.

9. (Original) The machine in accordance with claim 1, wherein, for a practically new carrier band, an average pressure rise gradient in a section of the pressure profile which extends from a beginning of said press nip up to the maximum pressing pressure is greater than or equal to approximately 40 kPa/mm.

10. (Original) The machine in accordance with claim 9, wherein the average pressure rise gradient in said section is greater than or equal to approximately 60 kPa/mm.

11. (Original) The machine in accordance with claim 9, wherein the average pressure rise gradient in said section is greater than or equal to approximately 120 kPa/mm.

12. (Original) The machine in accordance with claim 1, wherein, in a practically new carrier band, an average pressure drop gradient in an end region of the pressure profile is greater than or equal to approximately 300 kPa/mm.

13. (Original) The machine in accordance with claim 12, wherein the average pressure drop gradient in said end region is greater than or equal to approximately 500 kPa/mm.

14. (Original) The machine in accordance with claim 12, wherein the average pressure drop gradient in said end region is greater than or equal to approximately 800 kPa/mm.

15. (Original) The machine in accordance with claim 12, wherein the average pressure drop gradient in said end region is greater than or equal to approximately 960 kPa/mm.

16. (Original) The machine in accordance with claim 1, wherein, in said at least one press nip, said water absorbent carrier band is positioned between said water-impermeable pressing band and the fiber material web.

17. (Original) The machine in accordance with claim 16, wherein the fiber material web is adapted to contact said cylinder.

18. (Original) The machine in accordance with claim 1, wherein said water absorbent carrier band comprises a felt.

19. (Original) The machine in accordance with claim 1, wherein said water absorbent carrier band is constituted differently in a thickness direction.
20. (Original) The machine in accordance with claim 1, wherein a side of said water absorbent carrier band adapted to face the fiber material web has a finer structure than a side of said water absorbent carrier band adapted to face away from the fiber material web.
21. (Original) The machine in accordance with claim 1, wherein said water-impermeable pressing band has a surface which is at least one of smooth, grooved and blind bored.
22. (Original) The machine in accordance with claim 1, further comprising at least one additional press nip formed at said cylinder.
23. (Original) The machine in accordance with claim 22, further comprising an additional shoe press unit arranged with said cylinder to form said at least one additional press nip.
24. (Original) The machine in accordance with claim 1, further comprising an additional press nip arranged ahead of said cylinder relative to the web travel direction.

25. (Original) The machine in accordance with claim 1, further comprising at least one suction device,

wherein ahead of said cylinder, relative to the web travel direction, said water absorbent carrier band and the fiber material web are guided by said at least one suction device.

26. (Original) The machine in accordance with claim 25, wherein said at least one suction device comprises at least one of suction roller and/or a suction shoe.

27. (Original) The machine in accordance with claim 1, wherein said shoe press unit comprises a shoe press roll.

28. (Original) The machine in accordance with claim 27, wherein said water impermeable pressing band comprises a pressing jacket of said shoe press roll.

29. (Original) The machine in accordance with claim 1, wherein said shoe press unit comprises at least one replaceable pressing shoe.

30. (Original) The machine in accordance with claim 1, wherein said water absorbent carrier band comprises one of a structured felt having one of protuberances and a coarsely structured surface.

31. (Original) The machine in accordance with claim 30, wherein said felt having protuberances comprises one of an imprinting fabric and an imprinting felt.

32. (Original) The machine in accordance with claim 30, wherein said structured felt having a coarsely structured surface comprises one of a patterning fabric and a patterning felt.

33. (Original) The machine in accordance with claim 1, wherein the fiber material web comprises curled fibers.

REMARKS***Summary of the Amendment***

Upon entry and consideration of the above Listing of Claims, prosecution of this application will have been reopened with claims 1 – 33 remaining pending.

Summary of the Official Action

In the Decision from the Board of Patent Appeals and Interferences, the Board presented a new ground of rejection pursuant to 37 CFR 41.50(b), whereby claim 1 has been rejected. No rejection of claims 2 – 33 has been made. By the present amendment and remarks, Applicants submit that the rejection has been overcome, and respectfully request reconsideration of the outstanding Office Action and allowance of the present application.

Examiner Did Not Reject Any Claims Subsequent to Remand

Applicants note the instant application was remanded to the Examiner on November 3, 2006 with instructions to consider dependent claims 2 – 33 in light of the Board's new ground of rejection of independent claim 1. The Examiner has not rejected any of claims 2 – 33 subsequently to the remand of this application, such that these claims are understood to contain allowable subject matter and would be allowable if presented in independent form in a subsequent response to the U.S. Patent and Trademark Office.

Moreover, it is understood any rejections of claims 2 – 33 or of independent claim 1 beyond the pending rejection over EDWARDS will require a non-final action on the part of the Examiner so Applicants will be afforded the opportunity to fully address any future rejections by the Examiner.

Traversal of Rejection Under 35 U.S.C. §103(a)

Applicants traverse the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over EDWARDS (U.S. Patent No. 6,248,210). The Board's new ground of rejection asserts EDWARDS shows a shoe pressing cylinder forming a nip, where a fiber material passes through the nip on a combination of water absorbent carrier and water-impermeable pressing band. The Board also asserts EDWARDS disclosed shoe element length of less than 7 inches is within the Applicants' recited range of greater than 80 mm, and asserts, notwithstanding disclosure of a peak pressure greater than about 2 MPa, EDWARDS would have fairly suggested to one ordinarily skilled in the art a pressure outside the preferred range. Applicants traverse the Board rejection.

As Applicants have maintained throughout prosecution of this application, EDWARDS discloses a process for pressing and dewatering a fibrous web, in which a nip pressure profile is optimized on a shoe press on a Yankee cylinder. To show this optimization, EDWARDS provides comparative examples between a conventional shoe having a length of 120 mm, a suction press roll, and an inventive shoe having a length of 50 mm. As previously discussed, the "typical shoe press" disclosed as a comparative example in Figure 3 is considered by EDWARDS to be ill-suited for low weight absorbent papers. Thus, Appellants respectfully submit EDWARDS expressly teaches against using the conventional shoe press arrangement with a Yankee dryer. In this regard, EDWARDS discloses in part:

"...since the press nip for low weight tissue and towel grades is pressure controlled, the very low peak pressure could cause a decrease in post press dryness, ultimately causing a loss in production. The counter roll in a conventional shoe press is smaller by comparison to the diameter of a Yankee dryer. As a result, the use of a conventional shoe shape would make it very difficult to remove the felt/fabric from the sheet at the nip exit.

Therefore, conventional shoe shapes and conventional felt/fabric takeoff angles would exacerbate rewet for low weight absorbent products."

EDWARDS, Column 5, lines 55 – 65.

Because EDWARDS admits a typical shoe press is not appropriately suited for use in the manner asserted by the Board in the pending rejection, Appellants submit that EDWARDS is non-enabling for the use of a conventional shoe press on a Yankee dryer. Moreover, as EDWARDS expressly teaches against using the typical press shoe in the disclosed apparatus, Applicants submit EDWARDS fails to teach or suggest the combination of features recited in at least independent claim 1.

As further evidence, Applicants note Figure 12 of EDWARDS which again provides a comparative example of the use of the conventional press shoe of 1120 mm versus the inventive press shoe of 50 mm. While this example fails to provide any teaching or suggestion for the maximum pressing pressure utilized, i.e., only line force is disclosed, the conclusion again is that the typical 120 mm shoe "shows no solids benefit versus the suction roll at present operating line load limits of current Yankee dryers . . . , while the 50 mm pressure optimized shoe press shows an advantage of several percentage points of solids." Thus, EDWARDS again show that the smaller 50 mm shoe provides benefits not achievable with the conventional 120 mm shoe.

As a result of this disclosure, Applicants submit EDWARDS fairly suggests the smaller 50 mm shoe element forming a press nip against a Yankee dryer cylinder provides results that cannot be obtained with a conventional 120 mm shoe element. Thus, Applicants submit EDWARDS teaches against the recited combination of features, and provides no teaching or suggestion as to why one ordinarily skilled in the art would modify EDWARDS to utilize a conventional 120 mm shoe element.

As EDWARDS expressly discloses *not* to use a conventional shoe press with a Yankee dryer (where an example of a conventional shoe press not suited for use with a Yankee dryer has a length of 120 mm with a maximum pressure of 1,700 kN/m²), Applicants submit EDWARDS expressly discloses *not* to structure and arrange the elements of a machine in the manner recited in the pending claims, this document cannot even arguably suggest Applicants' invention under 35 U.S.C. § 103(a).

Further, Applicants submit nothing in EDWARDS discloses the recited features as recited in independent claim 1, such as, *inter alia*, a length of the press nip being greater than or equal to approximately 80 mm. While the Board asserts EDWARDS teaches a shoe element length of less than 7 inches, Applicants' independent claim 1 does not recite *shoe element* length, but instead recite the length of the *press nip*. As shown in Figures 1, 9, 10, and 11 of EDWARDS, the length of the shoe element is decidedly greater than the length of the nip formed between the shoe element and the counter roll. However, as EDWARDS fails to provide any suggestion that the drawings are to scale, a determination of nip length cannot even arguably be ascertained, such that this document cannot render unpatentable the press nip length recited in at least independent claim 1.

Therefore, Applicants submit EDWARDS provides no teaching or suggestion for the length of the nip formed by any of the disclosed shoe elements, such that this document cannot even arguably teach or suggest the recited length of the press nip being greater than 80 mm, as recited in at least independent claim 1.

With regard to the maximum pressing pressure recited in the pending claims, Applicants submit the Board has not provided any evidence to support their assertions

of obviousness. That is, the Board asserts EDWARDS fairly suggests to one ordinarily skilled in the art using a pressure somewhat outside of the preferred range, however, the Board has not identified what this disclosure of EDWARDS fairly suggests to one ordinarily skilled in the art. By defining about 2000 kN/m² as a minimum pressure, Applicants submit this disclosure fairly suggests, to achieve the advantageous results described in EDWARDS, the pressure in the press nip should not be below 2000 kN/m². Applicants note there is no suggestion in EDWARDS the benefits of the 50 mm shoe would be available if a pressure below 2000 kN/m² were employed.

Further, Applicants note there is no suggestion that EDWARDS' expressly recited range of preferably greater than 2000 kN/m² would render obvious Applicants' recited range of less than or equal to approximately 2 MPa, even if there is some degree of overlap. That is, Applicants have not recited a specific pressure, but rather a range of pressing pressures that is not even arguably suggested by EDWARDS.

For this additional reason, Applicants submit EDWARDS fails to render obvious the combination of features recited in at least independent claim 1.

Accordingly, Appellants respectfully request that the Examiner reconsider and withdraw the Board's rejection of claim 1 under 35 U.S.C. § 103(a) and indicate this claim is allowable.

Application is Allowable

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

Authorization to Charge Deposit Account

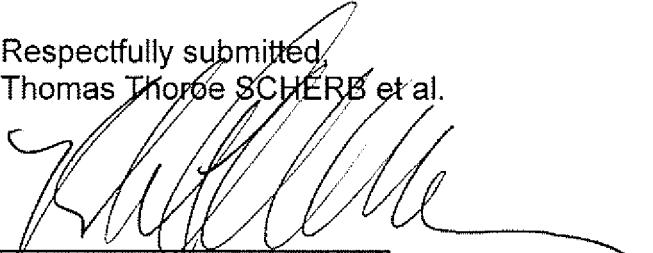
The undersigned authorizes the charging of any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, to Deposit Account No. 19 - 0089 in order to maintain pendency of this application.

CONCLUSION

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 1 - 33. The applied reference of record has been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully submitted,
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